The Fire Stone via the Kermes Method

This method is described in Jean Dubuis' lessons, and should not be attempted until you have a good grasp of the fundamentals of alchemy, have had some good practice in the mineral realm, and have all possible safety precautions in place.

Roast powdered antimony (stibnite) as before in making glass of antimony.

Prepare a solution of regular caustic soda (NaOH - commercially available) in the proportion of 200g per liter of distilled water. Use a weight of stibnite roughly equivalent to the weight of the caustic soda. There is no fixed rule, for everything depends on how rich the mineral is in antimony. The solution will self-heat, so pour in the soda very slowly.

Heat for an hour at 90C and filter. You will obtain a golden yellow liquid. If the ore is rich, do not throw away the residue which still contains some antimony.

In a well-ventilated room, outside or under a fume-hood, proceed with the following operation: Pour commercial acetic acid (not glacial acetic acid for it is too expensive for this, but the technical or industrial grade acid, often called pyroligneous acid). An orange-red precipitate forms immediately and a gas (H2S) is released with an unpleasant odour that you should not breathe as it is poisonous. Generally, in the beginning, the precipitate redissolves; add more acid and agitate with a glass rod.

The pH should be checked with a pH meter or paper. Definitely stop pouring acid by pH 7, or neutral pH, otherwise some precipitate will be redissolved.

Then filter the liquid to collect the red precipitate that should be thoroughly drained, but not completely dried by the heat. As a matter of fact, neutralizing the soda with acetic acid produces sodium acetate which is water-soluble and therefore it can be washed out with water.

In order to remove the remaining sodium acetate, you can leach the Kermes a second time with *cold* distilled water and drain it again.

Next, obtain some acetic acid, preferably derived from the distillation of wood. This acid, which is easy to obtain, is relatively inexpensive. Distill it at least once.

Fill a Soxhlet with the drained Kermes and the acetic acid. The circulation will give the acid a golden yellow colour. Take the acid out and refill with some fresh acetic acid for as long as the acid takes on a colou. Usually once is enough.

Pour the acid into a distillation train and distill off 1/4 of the volume. The acid you distill over can be recycled for the same use. The acid at the bottom of the round-

bottom flask is cooled down. Here, several results are possible:

1. The acid remains liquid and black deposits remain at the botto of the round-bottom flask. Decant or filter. Be careful, for the acetic acid can solidify in the course of the work.
2. The acid remains liquid and there is no deposit. Pour it into a beaker and leave it for a night or two. Then, either it "takes" as a white mass or crystals start forming. In this case, collect them, dry them on paper and put them into an airtight container.
3. The liquid doesn't crystallize and doesn't take as a white mass. Reduce its volume again through distillation. Remove 1/3 to 1/4 of the volume and you'll find yourself back to either one of the previous alternatives.

In the case that it takes as a white mass in the beaker, slant the beaker (a lot if necessary) in order for the acid between the crystals to escape. Generally with this acid we obtain beautiful transparent crystals.

In both cases, crystals or white mass, you should pour out the entire solution. What doesn't take as a white mass and doesn't crystallize is kept to be used later.

For our first experiments with dry distillation, it is better to use the white mass, which is easier to obtain than the crystals. As a matter of fact, this mass is a block of tiny crystals and their reduced size creates the opacity.

In all previous cases, it is better to end the distillation too soon rather than too late, otherwise everything is lost including the round-bottom flask.

To fill the distillation flask with the white mass, melt it first using a water-bath and then pour it into the flask. It doesn't matter whether the mass forms crystals or not.

The distillation apparatus consists of the following: An electrical flask-heater and the round-bottom flask (not with ground glass) of a half-liter or one-liter capacity, topped with a silicone stopper which is pierced with two holes: one for a 300C thermometer, the other for a 3 mm-diameter glass tube. The vapours will be led first into a spiral condenser with a flask at the bottom, then they'll pass into a second simple condenser, and finally into a bubbling apparatus filled with absolute alcohol.

You should increase the heat in a very long and slow progression. If it takes as a mass again, heat very slowly until everything has returned to the liquid state.

Then, increase the temperature to a light boil. The phlegm passes over and is collected in the first flask. Sometimes, a new solid phase occurs of a short duration and without any volume change, then a new solid phase follows. White smoke starts to pass and suddenly everything passes to the solid state and the volume of matter is increased three- to fourfold. Quickly change the first receiving flask. The red oils pass and progressively a thick, heavy, white smoke, giving an impression of viscousness, fills everything, flasks and condensers, and dissolves into the alcohol.

The red oil is the Sulfur of antimony. The Mercury, or Spirit of antimony, is dissolved by the alcohol, which can increase 10-20% by volume in a single operation. Maintaining the bubbling tube in a very cold bath clearly improves the outcome of the operation. With a condenser it is impossible to condense these vapours. Put the oil aside in an air-tight flask, preferably away from light.

If the operation has been taken to completion, a crumbly black matter remains in the flask; this is the Black Lion. Grind it finely and place it in an earthen crucible (grog style). In turn, place the crucible on a kaolin surface. The layer of kaolin itself is in a flat, stainless steel container. Place it in the oven and heat to 1000C.

Once it has cooled down, a hard white mixture is obtained, which generally has partially penetrated the earthen crucible. Be careful of the salt, for even if it is spilled in small quantities it can ruin the muffle of the furnace. Place the crucible, without detaching what is attached to it, into a glass or porcelain container and place the whole into a thermally- insulated box. The crucible is submerged in boiling distilled water. The next day, withdraw the water and if all the salt is not dissolved, do it again.

Slowly evapourate the water, without boiling, and continue until very small white flakes appear in the solution. Let it cool down and you obtain magnificent cubic crystals which can be up to 10mm on a side. Separate these crystals, dry them and keep them away from the air. They are the Magnets of the Philosophers. They have the property of fixing the Philosophical Mercury (described later).

The alcohol charged with the Mercury possesses part of the qualities of the Circulatum Minor, but it has one drawback which makes it difficult to use. The Mercury is not fixed by the alcohol and, at the first false maneuver, it escapes and the alcohol regains its ordinary properties. However, by cooling down the flask containing the alcohol in a freezer along with the flask containing the matter to be extracted, you can successfully complete at least one extraction. This alcohol draws the essence of any metal. *Warning:* Do not try it on mineral salts because with some metals there can be an explosion.

To make the Fire Stone, do the following:

1. Imbibe the Salt with the red oil - 8 days in the incubator at 42C.
2. Pursue the imbibations until the oil is refused; about 6 weeks.
3. Place the whole thing in the Philosopher's Egg (thickness of glass = 4 - 5mm)
4. Imbibe with the Mercury
5. Close the Egg with the seal of Hermes (air-tight)
6. Place it in the incubator at 42C
7. If the product turns black, wait.
8. If the product turns red, open and add some Mercury and close with the seal of Hermes again.

Caution:

- If there is not enough Mercury, a red vitrification occurs and everything is lost.
- If there is too much Mercury, there is a risk of explosion and everything is lost.

The cycle of this Fire Stone is about 9 months at 42 - 44C. During the filling of the Egg, avoid bacterial contaminations or contamination through plant Sulfurs. No odours or perfume are allowed in the lab during this operation.

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